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CENTRAL SNAKE BASIN (IDAHO), ECONOMIC BASE STUDY AND FORECAST, 1960-2010

Public Health Service
Portland, Oregon

November 1965

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COLUMBIA RIVER BASIN PROJECT
For Water Supply and Water Quality Management

CENTRAL SNAKE BASIN (IDAHO)
ECONOMIC BASE STUDY AND FORECAST
1960-2010

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Region IX

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I. PRESENT POPULATION

The twelve counties of the Middle Snake Basin had in 1960 a population of just over a quarter of a million persons.

Population density is low throughout most of the basin. Ada and Canyon Counties contain sixty percent of the area's inhabitants, most of them concentrated in or near the three principal cities of the region: Boise, Nampa, and Caldwell. A secondary focus of population is provided by the line of food-processing towns: Payette, Ontario, Nyssa. Between these foci, a substantial part of the remaining populace of the region subsists in a series of smaller communities separated by farms. The population outside of this center, which has formed in the lower reaches of the Boise, Payette, Owyhee, and Malheur Rivers, is widely dispersed through the semi-arid regions which enclose it on three sides, and the mountainous, forested northern portion of the basin.

Population growth for several decades has occurred at a rate exceeding that of the State of Idaho. In the last two decades, growth has been fairly even. An annual rate of population increase of 1.8 percent in the 1940-1950 decade slowed only moderately to 1.6 percent during the 1950's. Table 1 lists populations of the principal divisions of the basin at each of the last three national census periods.

TABLE 1

COUNTY POPULATION: 1940-1960 a/

Area	Population 1940	Population 1950	Population 1960	1960 Population Sq. Mi.
Ada County	50,401	70,649	93,460	89.7
Boise	(26,130)	(34,393)	(34,481)	
Associated Areas	(2,100 E)	(15,724 E)	(39,486)	
Boise Urbanized Area	28,230 E	50,117 E	73,967 b/	
Kuna	443	534	516	
Meridian	1,465	1,810	2,081	
Rural	20,263 E	18,188 E	16,896	
Canyon County	40,987	53,597	57,662	99.4
Caldwell	7,272	10,487	12,230	
Middleton	477	496	541	
Nampa	12,149	16,185	18,013	
Notus	277	313	324	
Parma	1,085	1,369	1,295	
Wilder	507	555	603	
Rural	19,220	24,192	24,656	
Elmore County	5,518	6,687	16,719	5.5
Glenns Ferry	1,290	1,515	1,374	
Mountain Home	1,193	1,887	5,984	
Rural	3,035	3,285	9,361	
TOTAL: BOISE RIVER BASIN	96,906	130,933	167,841	
Boise County	2,333	1,776	1,646	0.9
Horseshoe Bend	N.A.	401	480	
Rural	2,333	1,375	1,166	
Gem County	9,544	8,730	9,127	16.4
Emmett	3,203	3,067	3,769	
Rural	6,341	5,663	5,358	
Payette County	9,511	11,921	12,363	30.7
Fruitland	-	573	804	
New Plymouth	804	942	940	
Payette	3,322	4,032	4,451	
Rural	5,385	6,374	6,168	
Valley County	4,035	4,270	3,663	1.0
Cascade	1,029	943	923	
McCall	875	1,173	1,423	
Stibnite	-	717	-	
Rural	2,131	1,437	1,317	
TOTAL: PAYETTE RIVER BASIN	25,423	26,697	26,799	

TABLE 1 (Continued)

Area	Population 1940	Population 1950	Population 1960	1960 Population Sq. Mi.
Adams County	3,407	3,347	2,978	2.2
Council	692	748	827	
New Meadows	264	621	647	
Rural	2,451	1,978	1,504	
Washington County	8,853	8,576	8,378	5.7
Cambridge	405	354	473	
Weiser	3,663	3,961	4,208	
Rural	4,785	4,261	3,697	
TOTAL: WEISER RIVER BASIN	12,260	11,923	11,356	
Owyhee County	5,652	6,307	6,375	0.8
Homedale	857	1,411	1,381	
Marsing	-	643	555	
Rural	4,795	4,253	4,439	
Baker County	18,297	16,175	17,295	5.6
Baker	9,342	9,471	9,986	
Halfway	416	312	505	
Huntington	741	733	689	
Haines	377	321	331	
Rural	7,421	5,338	5,784	
Malheur County	19,767	23,223	22,764	2.3
Nyssa	1,855	2,525	2,611	
Ontario	3,551	4,465	5,101	
Vale	1,083	1,518	1,491	
Rural	13,278	14,715	13,561	
TOTAL: CENTRAL SNAKE BASIN	178,305	215,258	252,430	7.3

a/ U. S. Census of Population 1950, 1960.

b/ Estimates of the Boise Urban Area rest on examination of census tract maps and include only contiguous built-up areas. The Ada County Planning Commission includes 76,137 in its definition of the urban area for 1960, plus 5,040 persons as mixed, rural non-farm and farm population, and 1,388 in rural areas to obtain a population of 82,565 for its definition of the Boise Metropolitan Area.

The table indicates that population growth has not been even. Five of the twelve counties contained less people in 1960 than in 1940; six counties had lower populations in 1960 than in 1950. Indeed, nine counties experienced net migration during the 1950's; only Ada, Payette, and Elmore Counties saw populations grow at a rate above the natural rate of increase.

Population increase has been restricted to urban areas. Rural populations, in spite of intensive farming and scattered additions to irrigation, have declined. Growth of communities has, in general, correlated rather closely with their size, a fact suggested by the data in Table 2, which lists population growth rates by size of place for the last two decades.

TABLE 2

ANNUAL RATE OF INCREASE, URBAN AND RURAL POPULATIONS, 1940-1960 a/

Place	1940-1950	1950-1960	1940-1960
Boise Urban Area	5.9%	2.6%	4.8%
Nampa-Caldwell	3.6	1.2	2.2
7 Cities, 2,500-10,000	1.0	2.1	1.5
7 Cities, 1,000-2,499	2.4	0.2	1.3
14 Towns, 250-999	3.4	0.8	2.1
Total Rural	-0.1	0.3	0.1
Basin Total	1.8	1.6	1.7
State of Idaho	1.1	1.2	1.1

a/ Towns are classified according to 1960 census population, with the exception of Cascade (Valley County), which had over 1,000 inhabitants in 1940 but dropped below that level in the succeeding decade.

The moderate rural growth indicated during the period 1950-1960 is deceptive. Growing rural populations were recorded for Elmore County and Canyon County, where areas adjacent to the communities of Mountain Home in the one case, and Nampa and Caldwell in the other, experienced substantial growth which was rural only in that it occurred outside of the statutory city limits. If "urbanized areas" could be logically defined for these places, a somewhat higher growth rate for Nampa-Caldwell, a considerably higher growth rate for cities of 2,500-10,000, and a decline for rural populations would be demonstrated in Table 2.

The end result of the disparity between population trends for urban and rural areas has been a change in the character of the region. In 1940, almost 55 percent of the Middle Snake Basin's population was living in rural areas and communities of less than 1,000. By 1960 that portion of the population represented less than 40 percent of the total, and was exceeded in numbers by those living in and near cities over 10,000. Thus, in two decades the study area was transformed from a rural society to one with a moderate urban predominance, as indicated by Table 3.

TABLE 3

URBAN & RURAL POPULATION DISTRIBUTION, 1940-1960 a/

	Percent of Basin Population		
	1940	1950	1960
Boise Urban Area	15.8	23.2	29.4
Nampa-Caldwell	10.9	12.4	12.0
7 Cities, 2,500-10,000	14.7	13.7	14.3
7 Cities, 1,000-2,499	4.3	4.6	4.0
14 towns, 250-999	2.9	3.8	3.0
Total Rural	51.4	42.3	37.3

a/ Not adjusted to reflect urbanized rural populations except in the Boise Urban Area.

II. PRESENT ECONOMIC BASE

A. General

The economic life of the Middle Snake Basin is tied closely to farming. Lumbering, construction, and some services are developed at levels which provide strong support to the agriculture-based economy; but almost a fourth of total employment in 1960 was found either on farms or in food-processing industries developed to utilize farm products. Table 4, which lists employment in 1960 by industrial classification, and contrasts its distribution with that of the U. S. as a whole, points clearly to the pre-eminent position of agriculture in the area.

Economic development of the region during the nineteen-fifties was concentrated largely in lines of activity in which the region's position was already clearly established: agriculture, lumbering, and food processing. Miscellaneous manufacturing activities demonstrated noteworthy percentage growth in employment; but only in the transportation equipment classification, where trailer construction became a vigorous industry, did significant numbers become employed. Table 5 contrasts 1950 and 1960 employment in industrial classifications to provide some estimate of the nature of recent shifts in the regional economy.

The table indicates that employment in twelve industries rose at a perceptibly more rapid pace than either total employment or the labor force: forestry, metals, and metalworking, transportation equipment, food processing, printing and publishing, miscellaneous durable and non-durable goods manufacturing, wholesale trade, personal services,

TABLE 4

INDUSTRIAL DISTRIBUTION OF LABOR FORCE
MIDDLE SNAKE BASIN AND U. S., 1960 1/

Industry	Number Employed Middle Snake	% of Labor Force Middle Snake	% of Labor Force U.S.
Agriculture	17,537	18.3	6.6
Forestry and Fisheries	501	.5	.1
Mining	191	.1	1.0
Construction	7,436	7.8	5.6
Manufacturing	11,344	11.8	27.1
Furniture, lumber, wood pdts.	2,492	2.6	1.6
Primary and falctd. metals	367	.4	3.8
Machinery & tsptn. eqpt.	1,120	1.2	7.5
Other durables	801	.8	2.1
Food & kindred	5,190	5.4	2.6
Printing & publishing	986	1.0	1.7
Other non-durables	388	.4	7.0
Railroads & Rwy. Express	1,527	1.6	1.5
Other transportation & warehousing	2,065	2.2	2.8
Communications & utilities	3,018	3.1	2.3
Wholesale trade	3,666	3.8	3.4
Retail trade	14,618	15.1	14.6
Financial, business & repair svcs.	5,652	5.9	6.3
Personal services	6,336	6.6	6.4
Education	4,669	4.9	5.1
Medical & other professional svcs.	5,272	5.5	6.3
Public Administration	4,908	5.1	4.9
Industry not reported	1,903	2.0	3.8
Unemployed	5,101	5.3	5.2
TOTAL LABOR FORCE	95,744		

TABLE 5

EMPLOYMENT DISTRIBUTION, 1950 and 1960

	Number Employed			Percent Labor Force		1960 as
	1950	1960	Change	1950	1960	% 1950
Agriculture	21,841	17,537	(4,304)	26.4	18.3	80
Forestry & fisheries	257	501	244	.3	.5	194
Mining	599	191	(408)	.7	.1	31
Construction	6,531	7,436	905	7.9	7.8	114
Manufacturing	6,068	11,344	5,276	7.3	11.8	186
Frtre, Lumber, W.P.	2,233	2,492	259	2.7	2.6	117
Fry. & fabctd. metal	262	367	105	.3	.4	140
Mchy & tsptn. eqpt.	129	1,120	991	.2	1.2	869
Other dbles.	485	801	316	.6	.8	165
Food & kindred	1,892	5,190	3,298	2.3	5.4	274
Printing & publish.	776	986	210	.9	1.0	127
Other non-dbles.	291	388	97	.3	.4	133
Railroads & Rwy. Xpress	2,064	1,527	(537)	2.5	1.6	74
Other tsptn & whsg.	1,734	2,065	331	2.1	2.2	119
Comctns. & utlts.	2,773	3,018	245	3.4	3.1	109
Wholesale trade	2,843	3,666	823	3.4	3.8	129
Retail trade	12,549	14,618	2,069	15.1	15.1	117
Fncl., banss,rpr. svcs	4,788	5,652	864	5.8	5.9	118
Personal svce	4,734	6,336	1,602	5.7	6.6	134
Education	2,725	4,669	1,944	3.3	4.9	172
Mdcl. & other pfsnl.svc.	3,727	5,272	1,545	4.5	5.5	141
Public administration	3,712	4,908	1,196	4.5	5.1	132
Industry not reported	1,619	1,903	284	1.9	2.0	117
Unemployed	4,345	5,101	756	5.3	5.3	118
TOTAL LABOR FORCE	82,909	95,744	12,835			116

education, professional services, and public administration. In distinction, employment by agriculture, mining and railroads declined; and employment by communications and utilities firms rose at a lesser rate than the labor force.

This creates a somewhat deceptive appearance. Service occupations expanded generally in the United States during the nineteen-fifties; and the flowering of service jobs in the Middle Snake ...in may be viewed, in general, as participation in a national economic trend, rather than a regional shift in the employment pattern. Similarly, declining agricultural employment followed a broad-based national current.

In order to isolate distinctly regional employment growth or decline from changes resulting from participation in broader national trends, Table 6 lists the net difference between 1960 employment in each industrial classification, and the employment that would have occurred if change between 1950 and 1960 had been exactly proportional to national experience.

The decline in agricultural employment is seen to be well under what it would have been had national trends prevailed. Employment in lumbering and forestry grew in the face of a national decline. All manufacturing classifications grew in excess of the national experience. Growth in service employment, though vigorous, was generally less than might be anticipated from national figures. Railroad employment fell off at a lesser rate than for the Nation, and was another source of relative strength to the regional economy.

TABLE 6

VARIATIONS IN EMPLOYMENT CHANGE IN INDUSTRIAL CATEGORIES FROM RATE OF CHANGE NATIONALLY, 1950-1960

	EMPLOYMENT GAIN OVER U. S. RATE OF CHANGE		MATERIALLY SAME RATE OF CHANGE AS U. S.		EMPLOYMENT LOSS RELATIVE TO U. S. RATE OF CHANGE	
1960 Employment/ Labor Force Ratio Above U. S.	Agriculture	1462[a]			Construction	(630)
	Wood Products	549[b]			Communications and Utilities	(287)
	Food Processing	3296			Retail Trade	(729)
	Wholesale Trade	271				
1960 Employment/Labor Force Ratio Similar to U.S.	R. R. Transportation	212[a]				
	Public Adstn. and Education	482				
1960 Employment/ Labor Force Ratio Below U. S.	Primary and fabricated metal	90	Other Transportation	22	Mining	(280)
	Machinery and transportation eqpt.	951			Finance, business repair service	(1042)
	Other double mfg.	235			Other services	(268)
Total gain or (loss) relative to U. S.		7548		22		(3236)
NET GAIN		4334				

a/ Decline, but at a lesser rate than Nation.
b/ Rose, while employment nationally declined.

Thus, in spite of sharing in the national trend to increased emphasis on services, and despite robust growth of miscellaneous manufacturing sources of employment during the 1950's, the Central Snake Basin remained highly dependant on farming and, to a lesser degree, on logging, together with the food-processing plants and sawmills based on them.

The area is too large to display an homogenous economic configuration. While agriculture is highly developed through most of the Central Snake Basin, lumbering, food processing, other manufacturing, and services tend to be concentrated.

Food processing is most intensively pursued in the lower reaches of the Boise and Payette River Basins. Lumbering is concentrated in the northern part of the basin--Baker County and the upper Payette and Weiser River Basins. Services are most highly developed in the City of Boise. Miscellaneous manufacturing occurs principally about Boise, extending into the Nampa-Caldwell area, with a secondary concentration in the Baker, Oregon area.

Table 7 attempts to indicate the nature of specialization among subregions. It lists the proportion (percentage) of total 1960 basin employment in specific industries located in each of eight subareas.

Like any region whose economic viability is tied to natural resources, the Middle Snake area displays a strongly seasonal employment cycle: the exigencies of seed time, harvest, ice or mud in the forests, impose their own pattern on economic activities. Table 8 indicates something of the nature of this in the form of an index of quarterly employment.

TABLE 7

DISTRIBUTION OF AREA EMPLOYMENT AMONG SUBAREAS, 1960
(PERCENT OF BASIN TOTAL)

Sub-Area	Agri-culture	Lumber-ing	Food Process-ing	Other mfg.	CSTCN	Forestry & Mining	TSPTN CMCTN Utility	Trade	Other Sources	Pop-ula-tion
Ada County	12.9%	18.0%	17.3%	54.8%	48.8%	34.6%	43.1%	44.3%	50.0%	37.1%
Canyon County	31.4	6.4	42.3	24.8	13.4	4.1	26.2	22.8	20.0	22.9
Elmore County	2.9	2.0	-	1.2	5.8	2.6	6.9	3.4	4.2	6.6
Owyhee County	6.8	-	2.2	1.3	2.0	-	1.4	1.7	1.5	2.5
Payette R. Basin[a/]	13.1	48.0	16.5	3.1	9.1	24.8	7.4	8.3	7.2	10.6
Weiser R. Basin[b/]	7.3	8.3	6.1	4.1	3.2	6.7+	3.3	4.2	4.2	4.5
Malheur County	18.2	1.3	13.8	2.7	6.4	4.1	5.5	8.9	7.3	9.0
Baker County	7.4	16.0	1.8	8.0	11.3	23.1	6.2	6.4	5.6	6.9

a/ Payette, Gem, Boise and Valley Counties.
b/ Washington and Adams Counties.

TABLE 8

INDEX OF EMPLOYMENT SEASONALITY, 1962 [a]
(Second Quarter=100)

	1st Qtr	3rd Qtr	4th Qtr
Agriculture [b]	77	105	98
Food processing	101	113	112
Lumbering	93	124	120
Construction [c]	83	103	101
Other manufacturing	89	95	85
Transportation, comm., utilities	94	101	101
Trade	90	101	104
Finance	95	103	103
Service & miscellaneous	92	100	93
Governments [d]	95	123	111

Monthly range for three principal industries [e]
(second quarter average employment=100)

Agriculture, high: 130 October
low: 75 December

Food processing, high: 125 December
low: 83 July

Lumbering, high: 133 August
low: 88 March

[a] Idaho Employment Security Agency, Oregon Dept. of Employment
[b] Estimate for State of Idaho as a whole
[c] Excludes Elmore County
[d] All employment by Federal, State and local governments
[e] Based on monthly figures for the State of Idaho as a whole

The seasonal employment cycle is relieved by some complementarity of operations. Food processing and farming have overlapping high labor requirements during the harvest, particularly in the month of October, but farming needs drop off thereafter, while processors reach their peak of activity during December when farm needs are small and sugar refineries and other food processing plants are at peak operating levels. Forestry and lumbering attain maximum labor strength during the summer (including temporary employees utilized for conservation tasks in national forests--the reason for the high level of third-quarter government employment) when farm requirements are also high, and a body of temporary and migrant labor becomes available.

B. Agriculture

Agriculture is the mainstay of the Central Snake Basin's economy. It employs more persons than any industry other than retail trade; it supplies the raw materials for the principal manufacturing industries; and it has served as the focus of natural resource development.

Irrigation is the motivating force of the basin's farms. Among the major crops, all sugar beets, potatoes, vegetables, berries and fruits are produced under irrigation. In 1959, 63 percent of the pasture, 73 percent of the grain crop, 74 percent of the hay crop, and all of the crop of field seeds were developed on irrigated farms - though not necesaarily with the use of irrigation.

Given irrigation, the soil is extraordinarily fertile; and, with a long, warm growing season, many kinds of crop may be cultivated. To this natural flexibility, improvements have been added in the technology and organizational aspects of agriculture and in the average degree of capital invested in each farm. The result has been the evolution of diverse farming patterns to meet the conditions of sub-areas and the markets opened by expansion of food processing.

The recent course of development has been similar to that of most western agricultural areas. In the decade between the 1950 and 1959 censuses of agriculture, 18 percent of the total number of farms, some 2,700, disappeared, mostly through consolidation. In the course of this evolution, 4,300 farm jobs were obviated--one in five. Over 53,000 more acres were irrigated at the end of the decade than at the beginning, an increase of 6 percent. Total land in farms increased 294,000 acres, one-tenth going into production of crops. nine-tenths into pasture. Growth of food-processing provided superior

markets for agricultural products, and improved farming methods increased yields, with the result that the value of products sold by the basin's farmers advanced roughly $40 million, or by one-third, in spite of stable prices for farm products. The development of the areas agriculture during the decade is summarized in Table 9.

In terms of crop patterns, the area has been undergoing a prolonged transition from a food-grain producing area to one concentrating on animal products. Skyrocketing wheat yields have facilitated the transition, by providing higher outputs from shrinking land inputs. This has allowed a growing portion of the total farm land to go to production of hay, feed grains (corn acreage, particularly, has increased) and pasture. In addition, the acreage devoted to potatoes, sugar beets, and fruits and vegetables has increased at varying rates, depending on market conditions.

Cattle feeding has become an important agricultural function in the area. In 1962 Idaho ranked fourth among the western states, fifteenth in the Nation, in number of cattle on feed; and the Central Snake Basin, together with an area beyond the basin's eastern boundary, is the center of Idaho cattle feeding industry.[1/] The nineteen registered feed lots in the basin in 1963 were found at Caldwell (9), Nampa (4), Payette (2), Wilder (2), Weiser, and Emmett.

1/ The number of cattle on feed in Idaho at January 1 rose from a wartime low of under 20,000 in 1940 to 125,000 in 1957, a record level that has been exceeded since 1961 after a sharp decline in the late 1950's: T. Bell and M. Hemstrom, Idaho Beef-Growth and Development of an Industry, U. Idaho, Oct. 1962.

TABLE 9

AGRICULTURAL TRENDS, 1949-1959[a/]

	1949-50	1959	1959 @ % 1949-50
Land Use Trends			
Number of farms	14,802	12,111	81.7
Land in farms (acres)	5,680,335	5,974,486	105.2
Average size of farm (acres)	384	492	128.3
Land irrigated (acres)	910,618	963,891	105.9
Cropland harvested (acres)	799,256	828,943	103.7
Pasture (acres)	4,337,907	4,571,231	105.4
Acreage Devoted to Principal Crops			
Hay	370,086	392,842	106.1
Wheat	109,123	85,552	78.4
Corn	33,791	72,874	215.8
Sugar beets	39,662	54,722	137.8
Barley	68,097	52,072	76.5
Potatoes	21,795	20,890	95.9
Vegetables	18,739	18,730	100.0
Berries, fruits, nuts	14,397	13,966	97.0
Output of Principal Crops			
Wheat (bushels)	3,408,637	3,895,129	114.2
Corn harvested for grain(bushels)	986,244	2,076,925	210.3
Barley (bushels)	2,408,228	2,039,421	84.7
Hay (tons)	863,086	954,784	110.6
Sugar beets (tons)	869,016	1,374,631	158.3
Potatoes (CWT)	4,772,655	4,924,080	103.1
Per-Acre Output of Principal Crops			
Wheat (bushels)	31.3	45.5	145.3
Corn (bushels)	29.2	28.5	97.6
Barley (bushels)	35.4	39.3	111.0
Hay (tons)	2.33	2.42	103.9
Sugar beets (tons)	21.8	25.1	115.1
Potatoes (CWT)	218	236	108.3

TABLE 9 (Continued)

AGRICULTURAL TRENDS, 1949-1959[a/]

	1949-50	1959	1959 @ % 1949-50
Animal Populations			
Cattle and calves	543,169	689,351	127.0
Milk cows	66,825	76,258	114.1
Sheep	443,097	290,943	65.6
Swine	67,368	70,369	104.5
Animals Sold			
Cattle and calves	232,561	364,598	156.6
Sheep	328,678	305,006	92.8
Swine	95,963	85,831	89.4
Value of Crops Sold			
Field crops	$36,639,815	$49,223,387	134.2
Vegetables	4,115,535	3,865,763	93.9
Dairy products	15,028,551	23,706,836	157.7
Livestock	39,241,274	65,948,395	142.6

a/ U. S. Census of Agriculture, 1954, 1959.

Growth of dairy farming, too, has been rapid, with the Boise River Basin (Ada and Canyon Counties) and the Payette River Basin (Payette and Gem Counties) leading the course of development. Though dairy herds increased only 14 percent in the 1950 - 1959 decade, value of dairy products sold rose almost 58 percent, due largely to increased milk production per cow.1/

Sugar beets are grown in ten of the twelve counties of the Central Snake. Production, however, is concentrated in Canyon and Malheur Counties--sites of the refineries--where 70 to 75 percent of the total harvest originates. In the case of potatoes, the same two counties account for 80 percent of production. Acreage devoted to potatoes has declined, and output has risen only moderately since 1950, although processing plants in Caldwell and Ontario were pioneer installations in the industry. With the development of broad consumer markets for a variety of processed potato products, the potato processing center-- and thus the grower's market-- has shifted eastward to the better-suited soils of the Upper Snake Basin. In 1962 and 1963, however, private irrigation projects developed in Elmore and Owyhee Counties were planted largely in potatoes.

Vegetables, principally sweet corn, are also produced chiefly in Canyon and Malheur Counties, where markets are provided by local processors. Payette and Gem Counties also contain processing markets, and provide secondary concentrations of vegetable plantings, as well as the major part of the area's output of fruits and berries; an output that is supplemented by the production of contiguous portions of Canyon and Washington Counties.

1/ Annual milk production per animal rose from 6,320 pounds in 1952 to 8,360 pounds in 1963, an increase of over 32 percent: U. S. Dept. of Agriculture Statistical Reporting Service, Boise, March 1964.

C. Food Processing

Growth of food processing has provided the major formative influence in the recent industrial development of the Central Snake Basin. By modifying and creating markets for farm products, food processing has acted to speed the pace of agricultural change. By absorbing the labor released by improved farm productivity, processing has slowed the pace of out-migration of population. And in creating an additional market for industrial products, food processing has encouraged development of miscellaneous manufacturing and construction.

Reflecting the diversity of agricultural output, the food processing industry of the basin embraces a variety of processes and produces a wide range of products. Table 10, which lists the agricultural processing plants of the region, includes 87 units. Most of these are of only moderate size, but some are plants of substantial proportions, whose products supply a not inconsiderable portion of the total national market.

At Nampa, the center of the area's processing activities, the Amalgamated Sugar Co. refinery, the General Foods frozen vegetable plant, and the Albertson's Poultry Processing Plant are installations of significant size and of sizeable output. The J. R. Simplot plant at Caldwell, whose operations include canning, freezing, and dehydrating of potatoes and other vegetables is another substantial plant. Ore-Ida Foods of Ontario, Idaho Canning Co. of Nyssa, the

TABLE 10

AGRICULTURAL PROCESSING PLANTS

Location	Firm	Product or Process
	Boise River Basin	
Eagle	Boise Valley Packing Co.	Meat packing
	Liberty Meat Packers	" "
	Mountaineer Meet Co.	" "
	Eagle Flour Milling Co.	Blended and prepared flour
Boise	Alpine Pac	Meat packing
	Custom Meat Packing Co.	" "
	Davis Packing Co.	" "
	G. L. Morrison	" "
	Swift & Co.	" "
	Van's Packing Plant	" "
	Boise Poultry Co.	Poultry dressing
	Idaho Poultry Co., Inc.	" "
	Walsh Poultry Co.	" "
	Creameries, Inc.	Fluid milk, creamery butter, ice cream, other dairy products
	Triangle Dairy	" "
	Home Dairies, Inc.	Fluid milk, ice cream, other dairy products
	Young's Dairy Products	" "
	Albertson's Ice Cream Co.	Ice cream
	Sun Ray Drive-in Dairy	Fluid milk, ice cream
	J. R. Simplot Co.	Frozen fruits and vegetables
	Idaho Food Products, Inc.	Miscellaneous prepared foods
Meridian	Meridian Meat Packers	Meat packing
	Ada County Dairymen's Assoc.	Creamery butter, misc. dairy pdts.
	Wyeth Laboratories, Inc.	Misc. dairy products
	Creamline Dairy	Fluid milk, misc. dairy pdts
Nampa	Tiffany Meat Packers	Meat packing
	Nampa Packing Co.	" "
	Ben Anktell Slaughter House	" "
	Grimes Custom Slaughtering	" "
	Hillcrest Packing Co.	" "
	H. H. Keim Co., Ltd.	" "
	King Packing Co.	" "
	Albertson's Poultry Processing Plant	Poultry dressing
	Dewey Walls Poultry Farm	" "
	Greenleaf Creamery Co.	Creamery butter, ice cream
	Home Dairies, Inc.	Fluid milk, cheese, creamery butter, ice cream

TABLE 10

AGRICULTURAL PROCESSING PLANTS (Cont'd)

Location	Firm	Product or Process
	Boise River Basin (Cont'd)	
	Nampa Creamery Co.	Creamery butter
	Alpenrose Dairy	Fluid milk, ice cream
	Nampa Custom Cannery	Canned fruits and vegetables
	General Foods Co.	Frozen fruits and vegetables
	W. Idaho Potato Growers, Inc.	Frozen potatoes
	Gem State Potato Chip Co., Inc.	Potato chips
	Nampa Cider & Vinegar	Cider and vinegar
	The Nampa Elevator	Blended and prepared flour
	Amalgamated Sugar Co.	Beet sugar
Caldwell	Greenleaf Custom Slaughter	Meat packing
	Idaho Meat Packers, Inc.	" "
	Johnston Bros.	" "
	Carter Packing Co.	" "
	Dairymen's Cooperative Creamery of Boise Valley	Fluid milk, creamery butter, ice cream, dried skim milk, other dairy products
	Flavor Freeze, Inc.	Ice cream
	J. R. Simplot Co.	Canned, frozen, dehydrated potatoes, fruit and vegetables
	Western Idaho Potato Growers, Inc.	Frozen potato products
	Caldwell Flour Mills	Blended and prepared flour
Parma	Parma Ice Co.	Meat packing
Mountain Home	Mt. Home Ice & Storage Co.	" "
	Young's Dairy Products	Fluid milk, misc. dairy products
	Payette River Basin	
Emmett	Claude's Custom Pack	Meat packing
	Emmett Meat Co.	" "
	Gem Creamery Co.	Fluid milk, creamery butter
	Emmett Dairy	Fluid milk
	Gem Canning Co.	Canned fruits and vegetables

TABLE 10

AGRICULTURAL PROCESSING PLANTS (Cont'd)

Location	Firm	Product or Process
	Payette River Basin	
Payette	Wells & Davies	Meat packing
	Farmers Cooperative Creamery	Fluid milk, cheese, creamery butter, misc. dairy products
	Clover Lawn Dairy	Fluid milk
	Home Dairies, Inc.	" "
	Idaho Canning Co.	Canned fruits and vegetables
	Payette Cider & Vinegar Co.	Cider and vinegar
Fruitland	Bratcher Meat Pack	Meat Packing
	Frontier Dairy	Fluid milk
	Allen's Custom Cannery	Canned fruits and vegetables
	Fruitland Canning Assn., Inc.	" " " "
New Plymouth	Top Canning, Inc.	" " " "
	Weiser River Basin	
Council	Williams Custom Service	Meat packing
Weiser	Independent Meat Market	" "
	Home Dairies, Inc.	Fluid milk
	Lewis Berry, Inc.	Frozen strawberries
	Weiser Flour Mills	Blended and prepared flour
	Powder River Basin	
Baker	Eastern Oregon Meat Co., Inc.	Meat packing
	Valley Dairy, Inc.	Fluid milk, ice cream
	Snake River	
Nyssa	Treasure Valley Packing Co.	Meat Packing
	Clover Lawn Dairy	Fluid milk, misc. dairy pdts.
	Idaho Canning Co.	Canned fruits and vegetables
	Amalgamated Sugar Co.	Beet sugar
Homedale	Owyhee Meat Packers	Meat packing
Ontario	Boston's Beef House	Meat packing
	Pioneer Meat Packers	" "
	Farmers Cooperative Creamery	Ice cream
	Ore-Ida Foods	Frozen potatoes, fruits and vegetables, dehydrated potatoes

Amalgamated Sugar Co. refinery at Nyssa, and three meat packing plants, Wells-Davies at Payette, King Packing Co. at Nampa, and Swift and Co. at Boise, all provide substantial employment and produce for sizeable and far-flung markets.

Output of these plants is, for the most part, only estimable; few reliable production figures are available. A 1958 estimate of output of dairy products included:

Creamery butter	22,500,000 pounds
Ice cream	1,250,000 gallons
Cheese	36,000 pounds
Dried skim milk	42,750,000 pounds

The same source estimated that 190,000 of the 450,000 beef cattle of the area were slaughtered or shipped in that year.1/ The Swift & Co. packing plant at Boise is reported to have a slaughter capacity of about 250 head per day. King Packing Co. in Nampa slaughters about 200 head. Sugar production in 1959 was reported to have amounted to 158.6 million pounds at Nampa, 175.4 million pounds at Nyssa, produced in a season of 160 days of round-the-clock operation.

1/ Upper Snake River Basin, Vol. I, Summary Report, U. S. Dept. of the Interior and Corps of Engineers.

D. Forest Products

On the northern borders of the Central Snake Basin, the slopes of the Sawtooth Mountain Range of Idaho and the Wallowa Mountains of Oregon contain large tracts of forest. Most of Boise National Forest, portions of Payette National Forest, Sawtooth National Forest, and Wallowa Whitman National Forest lie within the basin, and these provide the raw materials for a steadily growing lumber industry.

The total extent of commercial forest land in southern Idaho is estimated by the U. S. Forest Service to include some 8.1 million acres: 5.2 million acres of sawtimber, 2.0 million acres of pole timber, .4 million acres of seedlings and saplings. This land is concentrated on the western slopes of the Continental Divide and the finger valleys of the Payette, Weiser, and Boise Rivers. But the latter area possesses the major part of the sawtimber. As a result, about 70 percent of southern Idaho's wood products industries employment, 85 percent of its timber production, and all of its veneer and plywood production[1/] are found in the Central Snake Basin. Table 11 lists by county the commercial forest area of the region.

Predominant tree species are ponderosa pine and Douglas fir, which account for about 43 percent and 36 percent, respectively, of lumber production. Lodgepole pine, true firs, and Engelman spruce are other commercially exploited species, with some white pine, western larch, and other species also harvested. Sawtimber reserves are estimated to amount to roughly 40 billion board feet, with Douglas fir accounting for 46 percent of the total, ponderosa pine 22 percent.

1/ This statement no longer true. At least two plywood plants have come into operation in northern Idaho.

TABLE 11

TOTAL AREA IN COMMERCIAL FOREST

County	Total Land Area (Acres)	Comm. Forest (Acres)	% Land Area in Comm. For.	% Idaho Comml. Forest Area
Ada	270,000	9,000	3.3	Negligible
Adams	851,000	450,000	52.9	2.8
Boise	1,224,000	838,000	68.5	5.3
Canyon	371,000	1,000	0.3	Negligible
Elmore	1,930,000	352,000	18.2	2.2
Gem	333,000	43,000	12.9	0.3
Owyhee	4,893,000	12,000	0.2	Negligible
Payette	253,000	Negligible	Negligible	Negligible
Valley	1,334,000	1,311,000	55.7	8.4
Washington	344,000	84,000	24.9	0.5
Baker (Ore.)	1,960,000	652,000	33.2	4.1
Malheur (Ore.)	6,297,000	21,000	Negligible	Negligible
TOTAL	22,169,000	3,910,000	17.5	24.1

A net annual growth potential of 1.3 percent per year suggests annual growth at a rate of about 520 million board feet, compared to production in 1956 of about 275 million board feet [1/] Southern Idaho timber stands however, are often remote and present access difficulties. Their exploitation involves high potential costs, and proceeded slowly during the morbid lumber market existing in the late nineteen-fifties.

Nevertheless, the wood products industry of the Central Snake Basin has been a relatively vigorous segment of the national forest products industry. Employment has grown in the face of a decline in national employment in lumbering and related products; and southern Idaho's rise in lumbering employment took place concurrently with a decline in that of the northern portion of the State, and a substantial increase in labor productivity. Table 12 contrasts the course of lumbering employment in the Central Snake Basin, Idaho and the U. S.

TABLE 12

LUMBERING EMPLOYMENT 1950-1960

	1950	1960	April 1963
Central Snake Basin	2,239[a/]	2,492[d/]	2,309[g/]
Idaho	12,089[b/]	11,844	9,000[g/]
U. S.	808,000[c/]	637,000	592,000[f]

1/ Idaho lumber production reached a record 1.61 billion board feet in 1955. Though production subsequently attained a level of 1.65 billion board feet in 1960, regional breakdowns are not available.

a/ U. S. Census of Population
b/ Covered Employment, reported by Idaho Employment Security Agency
c/ Statistical Abstract of the U. S. Includes furniture and fixtures employment, which was relatively stable through the period.
d/ Covered employment, annual average.
e/ Oregon Dept. of Labor, Ida. Employment Security Agency covered employment.

The forest products industry of the Central Snake Basin has achieved a rather high degree of efficiency and resource utilization. Small sawmills producing for local markets have tended to disappear from the manufacturing scene, being replaced by larger, more efficient units whose output finds its way into national markets, largely in the midwest. A part of the growth experienced by the area's wood products industry has occurred in response to expansion of wood pulp output. Some roundwood logged in the Central Snake Basin finds a market at midwestern pulp plants. Sawmill residuals as well as roundwood are dispatched to two regional pulp mills, one at Lewiston, Idaho where the Clearwater joins the Snake, one at Wallula, Washington, where the Snake and Columbia join.1/

A number of firms make up the Central Snake wood products industry. These include independent logging contractors, whose employment roster may typically vary from one to thirty persons, more than twenty sawmills, mostly of medium size, but with employment varying from four to seven-hundred persons, a veneer plant, a plywood plant, fabricators of structures and structural members, and a pair of box factories. Principal firms are listed in Table 13. Woodworking plants are mainly small, local cabinet shops employing one to five persons. Notable among the woodworking plants is the Marshall Fixture Co. of Payette, which employs over thirty people in producing church furniture for a national market.

1/ The Boise Cascade Co's Wallula mill depends entirely on residuals for its raw material input; and the company's huge Emmett plant is among the mill's principal suppliers.

TABLE 13[a/]

FOREST PRODUCTS FIRMS

Location	Firm	Product or Process	Capacity (1,000 FT/ Day)	Employment
Elmore County	Weatherby Logging Co.	Logging	70	25
	Weatherby Lumber Co.	Sawmill	70	
Boise	Boise Cascade Corp.	Sawmill	70	
	Johnson Bros.	Logging	25	5
	Harbur-Le Sne Corp.	Logging		
	Gordon Harris	Logging		
	Guy Harris Lumber Co.	Sawmill	35	
	Ralph Miller Logging	Logging	120	20
	M. C. Nelsen	Logging		
	Producers Lumber Co.	Sawmill	30	
		Logging	30	
	Shepherd's Sawmill Co.	Sawmill	8	
	D. A. Westenhaver Lumber Co.	Sawmill	20	
		Logging	25	
	Dale Dick	Logging		
	Perry R. Douglas	Logging		
	Orson Hyde	Logging		
	Gene S. Macaby	Logging		
	Theodore W. Thomas	Logging		
	Coker Logging Co.	Logging		
	Jones Industries Inc.	Pre-fab structures		
	Jones Roof Structures, Inc.	Pre-fab components		
	Pressure-created Timber Co.	Components		
	Ostrom Timber & Moulding Co.	Sawmill, moldings		
Cambridge	Iron Mountain Lumber Co.	Sawmill	35	
		Logging	40	
	L. C. Smith & Son	Logging	50	14
Cascade	Boise Cascade Corp.	Sawmill	60	
	Hays Logging Co.	Logging	15	5
	Long Valley Logging, Inc.	Logging		
Council	Boise Cascade Corp.	Sawmill, chips	70	
	Glen Harrington	Logging		
	MacGregor Triangle Co.	Logging		

TABLE 13 a/ (Cont'd)

FOREST PRODUCTS FIRMS

Location	Firm	Product or Process	Capacity (1,000 FT/ Day)	Employment
Council	Jack D. Shephard	Logging		
Emmett	Boise Cascade Corp.	Sawmill, chips, moldings, components	600	700
	Fuller & Baker	Logging		
	DuBoe Box Factory	Boxes		
Fruitvale	Rice Logging Co.	Logging	30	
Horseshoe Bend	Hoff Lumber Co.	Sawmill, moldings, paneling, ties	63	
	M. W. Renfroe	Logging		
McCall	Brown's Tie & Lumber Co.	Sawmill, ties, paneling, fencing, components	80	230
		Logging	200	80
	L. L. Helmich	Logging		
	George Ikola	Logging		
	Lake Fork Lumber Co.	Sawmill	55	
	Seerin's, Inc.	Logging	50	22
	Fincher's Logging Co.	Logging		
Meridian	Idaho Pine Co.	Sawmill, molding, paneling, components	55	
Mountain Home	Sawtooth Lumber Co.	Sawmill-Timbers	50	
	Engelman & Landers	Logging		
	J. E. Johnson	Logging		
	Jones Sawmill	Logging		
New Meadows	J. I. Morgan, Inc.	Logging	300	105
	Pack Logging Co.	Logging		
Gem County	Ola Lumber Co.	Sawmill		
		Logging	40	
Boise County	Placerville Lumber Co.	Sawmill	10	
		Logging	10	5
Adams County	Price Valley Timber, Inc.	Sawmill	75	55
		Logging	80	20

TABLE 13[a/] (Cont'd)

FOREST PRODUCTS FIRMS

Location	Firm	Product or Process	Capacity (1,000 FT/ Day)	Employment
			24,000,000 P.A.[2/]	
Payette	Payette Plywood Corp.	Plywood		
	Idaho Veneer Prod., Inc.	Veneer		
Nampa	Idaho Box & Lumber Co.	Boxes		
Ontario	Timber Laminators, Inc.	Pre-fab. structures & components		25
Baker	Baker Lumber Mills, Inc.	Sawmill	45	33
	Burnt River Lumber Co.	Sawmill, molding, planing, chips	60	147
	Ellingson Lumber Co.	Sawmill, panel-ing	100	125
	D & K Logging	Logging		
	Jack D. Hood Logging	Logging		
	Melvin Hess Lumber Co.	Logging		12
	Hopkins & Mason	Logging		17
	Robert Hopkins Logging	Logging		
	Kenneth W. Miles	Logging		6
	Eastern Oregon Lumber Mill	Sawmill		15
	Orchard Wood Products Co.	Sawmill		4
	Brush Prairie Logging	Logging	40	6
Baker County	Christ Bros.	Logging		
	Jim Lowe Logging	Logging		

a/ Idaho Industrial Directory, 1960-61; 1964 Directory of Oregon Manufacturers and Buyers Guide; Directory of the Forest Products Industries, 1964.

The significance of forest products activities to the economic life of the Central Snake Basin is evident. It accounted for 22 percent of all employment in manufacturing in the area in 1960. In Valley, Adams, and Boise County, forest products provided almost all manufacturing employment; and in Ada, Elmore, and Baker Counties, forest products accounted for well over half of total manufacturing employment. In terms of values added by manufacturing, lumber and wood products manufacturing in Idaho resulted in values added totalling roughly $7,030 per employee in 1960.1/ If the state figure may be reasonably distributed on the basis of employment, then values added by manufacturing in the Central Snake Basin amounted $18 million in 1960, and appear to have risen rather sharply in the succeeding three years as a result of both increased employment and rising productivity.

1/ Annual Survey of Manufacturing (1961), Part 8: Mountain

4. Miscellaneous Manufacturing and Construction

While food processing and lumbering continue to dominate Central Snake manufacturing, other manufacturing activities have displayed vigorous growth, as increasing population and industrial diversification have opened new markets. In the 1950-60 decade, a new manufacturing job in occupations other than lumbering and food processing was created, on an average, for every two jobs in the dominant manufacturing industries; and the percentage of the labor force engaged in miscellaneous manufacturing expanded from 2.3 to 3.8.

Showing more rapid growth than food processing, the fabrication of mobile dwellings became an important industry of the area in the late nineteen-fifties and early sixties. No less than nine firms were established--five in Boise, two in Nampa, one each in Caldwell and Weiser. Guardon Industries (Boise) and Kit Manufacturing Company (Caldwell) are the largest, with employment exceeding 100 at peak periods.

Printing and publishing provide a surprisingly significant part of the region's industrial diversification. Almost every town has a weekly newspaper, and three dailies (in Boise, Nampa, and Caldwell) are supported by the thinly populated region. In addition, a well-established publishing house, Caxton Press of Caldwell, and the Syms-York Company of Boise give the area two relatively large and elaborate printing establishments.

Local agricultural and food-processing industries have provided markets for diverse products. Small Pipe and Tank Corporation (Boise) fabricates farm implements, steel towers, and irrigation equipment. Farms Keller Lifter Company (Parma) produces pumps whose main use is in irrigation. McCallum Harvester, Inc. (Boise) produces harvesting and seeding machinery for use in cultivation of sugar beets and potatoes. Western Conveyor Company (Boise) fabricates various materials-handling devices, originally conceived in response to food processors' needs, though the range of markets has since broadened. The number of smaller firms, largely serving local industrial and consumer markets, continues to expand, and has been a noticeable feature of the overall trend to urbanization.

While miscellaneous manufacturing is only beginning to affect the economic structure of the Central Snake area, construction has for many years been a major force. In terms of employment, it has consistently occupied about eight percent of the labor force. In part, this is explainable by a high relative rate of population growth. In larger part it may be traced to the comparatively undeveloped character of the region, and the consequent opportunity for large-scale developmental projects. During the last decade, this took the form of dam building (Idaho Power Company's Snake River facilities), highway improvements, extensive urban development centered on the City of Boise, and installation of the Mountain Home military complex.

While the import of capital in connection with development of the region has been the principal factor in maintaining high levels of construction activity--a characteristic of most parts of the western United States--the Central Snake area also benefits from the location in Boise of the headquarters of the Morrison-Knudsen Company, one of the world's largest construction firms. The administrative and depot functions of the company at Boise provide a solid core of construction employment, considerably less cyclical than that typical of the industry.

F. Trade and Services

Trade and services for the Central Snake Basin are supplied in large part from the City of Boise. Indeed, Boise, Idaho's capital, supplies governmental and administrative services for a much larger area, as well as providing many wholesaling and professional functions for all of southern Idaho and a good part of eastern Oregon.

Boise's specialization in services has contributed to some apparent scarcity of service availability in other areas; a lack that is intensifed by population sparsity and, in some places, by the competing claims of adjacent communities for the custom of the rural market for services. Thus, the outlying communities of Weiser (Washington County), Baker (Baker County), and Mountain Home (Elmore County) have all developed a fairly broad range of services; while Payette, Gem, and Malheur Counties and the eastern part of Canyon County have developed commercial patterns based on the presence of several communities within a relatively restricted area, each contributing in part to satisfying service claims of an area embracing several towns and the interstitial rural population.

The variations in service availability resulting from the presence of a major service center within an area of low average population density are suggested in Table 14, which lists by county the proportion of the labor force employed in trades and services in 1960. Although it contains a State capital, the Central Snake Basin had a somewhat lower proportion of service employment than the Nation. Indeed, despite the contributions to service employment created by government, the service ratio was lower than that for the eleven western states, and lower than the national ratio in every county but one.

TABLE 14

COUNTY SERVICE EMPLOYMENT AS A PERCENT OF LABOR FORCE, 1960a/

Area	Percent Service Employment
Ada County	68.8
Canyon County	54.4
Washington County	48.8
Baker County	48.5
Valley County	46.7
Malheur County	45.5
Payette County	43.4
Adams County	43.0
Owyhee County	34.8
Gem County	34.6
Elmore County	34.5
Boise County	23.7
Central Snake Basin	55.8
Eleven Western States	59.1
United States	57.4

a/ U. S. Census of Population, 1960.

The extent to which the City of Boise dominates trade and services in the Central Snake Basin is suggested by Table 15. With just over 29 percent of the Basin's 1960 population, the Boise urbanized area provided roughly 45 percent of all service employment in the Basin, and over a third of total employment in each service industry classification except railroad transportation.

TABLE 15

Proportion of Total 1960 Service Employment Occurring in Boise Urban Area[a/]

Railroads and railway express	6%
Other transportation and warehousing	36
Communications and utilities	46
Wholesale trade	41
Retail trade	37
Financial, business and repair service	55
Personal service	58
Education	33
Other professional services	58
Public administration	61
All services	45

a/ Source: U. S. Census of Population. The table assumes that employment distribution in the Boise urbanized area was similar to that of residents of the City of Boise. Correspondence with Ada County totals is high and the picture seems faithful.

The rather low level of service availability and rate of growth of service employment relative to the Nation (CF Table 6) may be traced largely to low population density. Contributing to the region's deficiencies as a market for services is a level of personal income distinctly below national and regional standards, as suggested by the data in Table 16, contrasting Idaho income per capita from 1950 to 1962 with that of the United States, the Rocky Mountain States, and the Pacific Coast States.

TABLE 16

Comparison of Per-Capita Income, 1950-1962[a/]

Year	Idaho	U.S.	Pacific Coast	Rocky Mountain
1950	1279	1491	1788	1425
1951	1446	1649	1975	1643
1952	1574	1727	2068	1699
1953	1499	1788	2103	1667
1954	1494	1770	2089	1632
1955	1518	1866	2210	1701
1956	1654	1975	2326	1793
1957	1678	2048	2397	1884
1958	1738	2064	2430	1965
1959	1793	2163	2572	2028
1960	1765	2217	2625	2083
1961	1810	2267	2687	2104
1962	1941	2366	2800	2205

a/ U.S. Dept. of Commerce: Survey of Current Business, August, 1963.

While Idaho per-capita income is probably understated in the table, due to the inability of such figures to adequately reflect the substantial non-cash income of those engaged in agriculture, the general magnitude and the persistence of the gap between Idaho and adjoining areas are obvious. Pressure on farm prices, which contributed to a national lag in agricultural income, is at least partially responsible for maintaining the income disparity between Idaho and adjoining areas. The level of wage and salary

payments in the state has also worked to hold down the level of personal income, as suggested by Table 17 which compares average hourly earnings in manufacturing and in retail sales in Idaho and adjoining states.

TABLE 17

Comparison of Average Hourly Earnings, Mfg. & Retail Trade, Idaho and Bordering States[a/]

		Average Hourly Earnings			As % Idaho	
		1950	1960	1962	1950	1962
Manufacturing,	Idaho	$1.56	$2.25	$2.34		
	Oregon	1.79	2.55	2.64	115	113
	Utah	1.41	2.46	2.66	90	114
	Montana	1.61	2.45	2.58	103	110
Retail trade,	Idaho	1.04	1.79	1.90		
	Oregon		2.12	2.34		123
	Utah		1.93	2.06		109

a/ U. S. Dept. of Labor: Employment and Earnings Statistics for States and Areas, 1939-62.

While no per-capita income figures are available for the Central Snake Basin distinct from the State of Idaho, personal income, as measured by family income, would appear to be lower and to have risen no more rapidly. The analysis of growth of median family income in the counties of the Basin presented in Table 18 indicates that in 1960 only one county in the area had a family income level above the Nation's, and that income growth has lagged behind national and regional standards, in spite of the significant growth of manufacturing during the fifties.

Table 18

Trend of Median Family Income, by County, 1949-1959 a/

Area	1949 Median Family Income	1949 As % of U.S.	1959 Median Family Income	1959 As % of U.S.	1959 As % of 1949
Pacific Coast States	$3545	112	$6572	116	185
Ada County	3250	106	5868	104	166
Mountain States	3101	101	5660	100	183
Nation	3073		5660		184
Valley County	3630	118	5422	95	149
Baker County	2803	91	5266	93	188
Idaho	3046	99	5259	93	172
Central Snake Basin	2912 b/	95	5088	90	175
Adams County	3013	98	4976	88	166
Boise County	2364	77	4774	84	202
Elmore County	3171	103	4769	84	150
Canyon County	2768	90	4596	81	166
Malheur County	2752	90	4554	80	165
Gem County	2629	86	4467	79	170
Payette County	2315	76	4310	76	186
Washington County	2600	85	4231	75	163
Owyhee County	2257	70	4199	74	186

a/ U. S. Census of Population, 1950, 1960.

b/ Mean of county medians weighted by population.

G. Minerals and Mining

The working of mineral deposits has, from time to time, been a significant part of the economy of the Central Snake Basin. For the most part, such deposits in recent years have proved marginal or near marginal, soon depleted, or abandoned under all but the most favorable market circumstances. The 1958 dissolution of Valley County mining enterprises that had supplied a substantial portion of the Nation's supply of antimony and tungsten, as well as important amounts of mercury, represented the end of the latest period of mineral exploitation of more than regional significance.1/

In the mid-nineteen-sixties mineral industry activity is largely restricted to providing sand and gravel for local and highway construction, production of lime in Baker, Malheur and Canyon Counties--principally for use in regional sugar refineries--and the operation of the Oregon Portland Cement Co. at Lime (Baker County), whose employment of about 125 persons has been maintained by dam construction. In recent years, mineral commodities which have been developed in the Central Snake Basin included:

Columbium-Tantalum, obtained from dredging of alluvial sand deposits in Valley County, represented practically all of U. S. production in the late nineteen-fifties. Ilmenite (a source of titanium); garnet, for use in abrasives; rare earths and other minerals were obtained from the same source. Production ended in 1959.

1/ The closure of these mines made Stibnite, which had a 1950 population of over 700, a ghost town, contributed to a 14 percent decline in Valley County population, and a decline from a level of family income 15 percent above the national average in 1950 to one four percent below the Nation in 1960.

Gold and silver are obtained by small scale placer mining and as a by-product of other mining activities.

Mercury has been obtained in Washington County by open-pit mining, in Valley County and Malheur County.

Iron ore is produced at Iron Mountain, near Weiser. Ore is beneficiated at the site, and shipments have averaged up to 55-60 percent iron content.

Titanium concentrates derived from ilmenite deposits in Valley County and elsewhere in Idaho have been reprocessed by the J. R. Simplot Co. plant in Boise. Garnet abrasive material has been similarly produced.

Uranium has been derived as a by-product of Valley County euxenite deposits. Processing of the ores was carried out in other parts of the Nation.

Clays used in producing building brick are found in Ada and Elmore counties; bentonite, used as drilling mud and canal liner, has been taken in Owyhee County.

Gypsum, marketed as agricultural gypsum, has been produced intermittently from a surface mine near Weiser (Washington County).

Limestone and lime are produced in Baker, Malheur, and Canyon counties. Markets are found in regional cement plants, sugar refineries, and in agriculture. Chemical Lime Co., Baker, produces large quantities of quicklime used in production of calcium carbide and cyanamid, in pulp manufacturing and in steel and aluminum plants.

Lead and zinc have been produced in small quantities from Gem and Boise county deposits and copper ore has been produced in insignificant amounts in Adams County.

Value of mineral shipments over the five years 1957-1961 is listed by county in Table 19.

TABLF 19

VALUE OF MINERAL PRODUCTION, 1957-1961 [a/]

County	Value of Shipments ($1,000's) 1957	1958	1959	1960	1961	Products
Ada	380	611	613	N.A.	500	Sand & gravel, clays, gold
Adams	202	N.A.	22	N.A.	N.A.	Sand & gravel, copper, silver, gold
Boise	N.A.	34	2	35	N.A.	Sand & gravel, gold, silver
Canyon	185	170	263	282	465	Lime, sand & gravel, pumice
Elmore	402	689	520	196	91	Sand & gravel, gold, columbium, tantalum, silver, clays.
Gem	95	44	12	214	194	Sand & gravel, gold, silver, lead, zinc
Owyhee	N.A.	8	41	348	79	Sand & gravel, gold, clays, silver, lead
Payette	N.A.	---	106	37	---	Sand & gravel
Valley	1182	1213	641	35	N.A.	Colubium-tantalum, mercury, monazite, ilmenite, rare earths, sand & gravel, garnet, thorium, gold, silver.
Washington	578	1056	484	840	N.A.	Sand & gravel, mercury, iron ore, gypsum, gold, silver.
Baker	N.A.	N.A.	N.A.	N.A.	4927	Cement, stone, lime, sand & gravel, clays, gold, silver
Malheur	909	845	1008	457	735	Sand & gravel, mercury, stone, gold, clays, silver, lime.

a/ Source: Minerals Yearbook, 1958-1961.

III. ESTIMATED FUTURE GROWTH

(An economic forecast for the period 1960 to 2010 must be understood in terms of probabilities, of the inter-action of trends and resources. Major assumptions underlying this study have been developed for the Nation and the Pacific Northwest by inter-agency economic study committees. Application of the growth rates established in these assumptions to specific areas such as the Central Snake Basin is judgmental, involving a consideration of the resource base, the evolution of social attitudes, and degree of maintenance of trends.

(On the strength of such procedures, output levels may be established for principal industries; and the hypothesizing of productivity and labor force participation rates permits projection of population dispersion. The end product, however, must be viewed as a general outline of probabilities, neither a prediction nor a detailed industrial forecast.)

A. Agriculture

Agricultural production may be expected to continue to be the major force underlying the economy. The area is a favored one with regard to fertility and adaptability of soils; and climate and growing season lend themselves to agricultural production.

The raw input of land is not expected to increase to an appreciable extent. The Soil and Water Conservation Needs Inventory for the States of Oregon and Idaho offers the basic framework of lands available for various purposes in 1958, together with an estimate for 1975. This is presented in Table 20.

TABLE 20

AGRICULTURAL LAND USE CLASSIFICATIONS, 1958 AND 1975 (000's ACRES)

Area	1958		1975	
	Crop-land	Pasture-land	Crop-land	Pasture-land
Ada County	109.6	197.5	118.6	178.7
Canyon County	229.0	74.2	243.0	62.8
Elmore County	49.0	348.7	140.6	310.2
(Boise River Basin)	(387.6)	(620.4)	(502.2)	(551.7)
Boise County	14.7	80.3	10.7	77.6
Valley County	59.7	14.5	52.9	20.3
Cem County	51.4	153.7	55.2	149.0
Payette County	59.1	128.0	58.6	127.8
(Payette River Basin)	(184.9)	(376.5)	(177.4)	(374.7)
Washington County	114.6	488.3	114.1	484.4
Adams County	45.4	135.0	44.9	134.8
(Weiser River Basin)	(160.0)	(623.3)	(159.0)	(619.2)
Owyhee County	93.2	505.0	95.9	505.0
Malheur County	220.1	1,281.4	220.1	1,386.4
Baker County	153.1	642.8	157.0	633.0
	(466.4)	(2429.2)	(473.0)	(2524.4)
TOTAL	1,198.9	4,049.4	1,311.6	4,070.0

The principal addition to cropland indicated by the inventory is in Elmore County, where the Bureau of Reclamation has proposed a complex group of irrigation possibilities that would bring 100,000 acres under cultivation. Unquestionably, the addition of irrigation capabilities will have a greater bearing on increased output than any change in total acreage of land devoted to agricultural use. At this time, the Bureau of Reclamation has considered projects involving the new irrigation of 400,000 acres in the Central Snake Basin, of which the Elmore County projects involve the largest single parcel. In addition, individual irrigators show no sign of slacking the pace at which they add to irrigation. Private irrigation additions between 1959 and 1963 may be estimated at something in excess of 80,000 acres. For the most part, private development takes the form of pumping from wells; but at least two ambitious south-side Snake Projects involve lifts up the steep walls of the Snake River Canyon--and in one case, a total of 40,000 irrigated acres is envisaged.

Obviously the pace of new irrigation must slow over the next fifty years; there are limits to the availability of soil and water. Indeed, maturation of the potato-processing industry and the adjustment to the expansion of the market for beet sugar (created by disruption of established supply sources) indicate that the exceptional market growth that spurred development of irrigation after 1959 is not presently a factor in promoting new irrigation. On the other hand, plans to add some 140,000 acres over the next decade seem well conceived, and additional individual additions on a smaller scale seem to be assured. To establish a figure for planning use, it is assumed that the rate of addition to irrigation between 1959 and 1985 will be equal to that of the period 1949-63, or .85 percent per year. On these terms, some 1.2 million acres would be irrigated in 1985.

If the rate is extended to 2010, the total amount of land under irrigation would amount to 1.5 million acres.

Crop patterns may, in general, be expected to follow existing trends. Outputs of cattle, dairy products, sugar beets, and feed grains seem likely to continue to rise. Additional candidates for rising production include swine, poultry, and vegetable products. Growth of Pacific Coast markets and the constantly increasing degree of processing of products suggest varied outputs for any area capable of efficiently producing a range of agricultural products.

The employment opportunities offered by agriculture may be expected to continue to shrink. While the fantastic improvement of labor productivity in farming which marked the nineteen-fifties can not be expected to continue, the techniques now available would permit a considerable reduction in the work force simply through continued consolidation of smaller than efficient farms. It is reasonable, however, to expect a lower than national rate of employment decline, in view of the large relative size of present farms, and the prospect for substantial additions to irrigation.1/ It is anticipated, then, that the area will continue to increase its proportion of total national employment in agriculture.

Setting a target for agricultural employment is awkward. For the Nation as a whole, a very steep rate of decline has been forecast to 1975, one which anticipates no slowing of the massive productivity gains of the 1950's.2/ For the reasons outlined in the preceding paragraph,

1/ R. E. Struthers, Bureau of Reclamation economist, in the Role of Irrigation in Community Economic Structure, U. S. Dept. of Interior, Feb. 1963, suggested that one new farm job is created for every 100 acres brought under irrigation.

2/ cf Special Labor Force Report No. 28, Employment Projections by Industry and Occupation, 1960-1975, and Manpower Report of the President, both U. S. Dept. of Labor, March 1963 publications.

it would seem unreasonable to apply such a rate to the study area. Moreover, maintenance of improving labor productivity at a rate in excess of 5 percent a year for another quarter of a century strains credulity. Accordingly, the labor requirements of agriculture in the Central Snake Basin are projected to decline at a rate equal to 75 percent of the 2 percent national rate for the period 1919-1959, or at 1.5 percent per year, to 1985.[1/] Application of this rate projects agricultural employment to 12,000 in 1985.

1/ John P. Henderson, Changes in the Industrial Distribution of Employment, 1919-59, University of Illinois Bureau of Economic and Business Research, 1962.

B. Food Processing

The prospect of increased agricultural outputs, based on more efficient techniques and the expansion of irrigation, promises the food-processing industry of the Central Snake Basin a continued adequate source of raw materials. The products of the industry will, in all probability, continue to be those now produced--meats, dairy goods, sugar--with somewhat more emphasis on processed fruits and vegetables. These are materials which the region is well suited to produce, and which enjoy favorable demand trends. The processes to be employed are not predictable; technology will unquestionably change--freeze-drying, for example, may well become prevalent in the near future--but output levels consistent with the resource base and Census Bureau projections of population may be projected.

Meat packing holds the potential for vigorous future growth. Idaho production of meat animals is presently about two and half times its slaughter, in terms of weight. Production of meats, moreover, is only slightly higher than state consumption. Thus the area is well able to slaughter, and export, finished meat products from its stock of presently exported animals. This would be in keeping with the trend in force in the industry--packing near the point of production rather than in consumption centers. Since the region exports not only cattle, but the feed to fatten them, the conditions for cattle feeding, slaughter, and meat packing are all favorable.

Another regional factor to be taken into account is the fact that the western states have a marked, though slowly declining, deficiency in pork production relative to consumption. As efforts to

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increase hog production succeed, hog slaughter should grow to fill the production vacuum whose dimensions are suggested in Table 21.

TABLE 21 a/

PRODUCTION, SLAUGHTER AND CONSUMPTION OF MEAT, 1959 (1,000 POUNDS LIVE WEIGHT)

	Production	Slaughter	Consumption
	Hogs		
Pacific Northwest	162.8	337.2	499.1
11 Western States	436.0	1,102.0	2,456.0
Idaho	48.4	38.9	63.1
	Cattle		
Pacific Northwest	1;210.9	824.0	793.3
11 Western States	5,398.5	4,667.7	3,903.7
Idaho	447.5	173.4	100.3

a/ Lord, Bruce P. Potential for Meat Packing in Northeastern Oregon, Oregon State Department of Planning and Development, October 1963.

Demand conditions, too, are favorable. Per-capita consumption of meat in the United States has been rising at a one percent annual rate since 1950, with the rise occurring entirely in beef products; consumption of pork and mutton has declined. Given the present trend of average income, and the preference for meat as a food, there is no reason to anticipate saturation or reversal of demand.

The procedure for estimating the dimensions of growth of the meat-packing industry involves application of rates based on three factors: (1) continued growth of per-capita demand at about one percent per year; (2) growth of national population, about 1.9 percent

per year to 1985, almost two percent to 2010 (U. S. Bureau of Census, P-25, series II); and (3) growth derived from regional advantage-processing near the point of production--about one percent a year.

Sugar refining offers a somewhat more touchy projection problem. Although per-capita consumption of sugar has been fixed for several decades at 110 to 115 pounds per year, beet sugar has filled a growing portion of that total. With disruption of normal supply channels following the suspension of the Cuban quota, and the consequent lifting of domestic production quotas, the advance in production of beet sugar was particularly rapid. Table 22 suggests the course of this phenomenon.

TABLE 22
SUGAR PRODUCTION IN U. S. AND PRINCIPAL SUPPLYING AREAS, 1945-1962 (1,000'S TONS RAW VALUE)

Yearly Average or Crop Year	Total	Beet	Beet @ % of 1945-49
1945-1949	10,259	1,515	100
1950-1954	11,929	1,784	119
1955-1959	12,271	2,100	139
1960	14,320	2,450	162
1961	7,171	2,404	159
1962	7,298	2,585	171

The advance in output of beet sugar was most marked in 1963, when the industry delivered 55,403,450 CWT, compared to 45,155,535 CWT in 1962. The 22.5 percent increase in deliveries was marked by the large scale acceptance of beet sugar on the eastern seaboard for the first time, with industrial users supplying the principal demand.

Some moderation of the pace of production expansion created by the elasticity of supply of beet sugar is indicated by the contraction of previously inflated sugar prices in 1963-64. But it is unlikely that the beet sugar industry will give up its gains. a/ The Snake Basin has had more than its share of these. Between 1949 and 1959 the output of sugar beets in the Upper and Central Snake Basins increased from 1.37 million tons to almost 2.4 million tons, or by 75 percent--half again the overall rate of growth.

In order to arrive at reasonable output projections, it is assumed that:

(1) Sugar output increased at the national rate for beet sugar, or about 30 percent, between 1959 and 1963.

(2) There will be no per-capita loss of sugar consumption. b/

(3) Beet sugar will resume the process of increasing its share of the total market for sugar at the .7 percent rate of 1950 to 1960.

Processed potatoes, whose output and market acceptance skyrocketed during the last decade, should also show substantial increases in production. It would appear, however, that the major growth of the industry will take place in eastern Idaho, where the advantages of potato

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a/ The permanence of the gains made by beet sugar are tacitly acknowledged by the failure to apportion the Cuban quota among other foreign producers. Since the domestic lands suitable to growing sugar cane are limited, and, in effect, a part of the Cuban quota has been arrogated by beet sugar, the policy problems involved in a rollback of beet production by a realignment of the quota to restore the cane/beet balance seem unlikely to be encountered.

b/ This may be a somewhat debatable conclusion. General recognition of excessive caloric intake of Americans has, among other phenomena, involved efforts to curtail sugar consumption. Should this persist, the resulting loss of per-capita consumption would be unlikely to result in development of substitutive outlets, since the domestic price structure excludes the possibility of export, except under massive subsidies.

culture over other agricultural production are more marked than in the Central Snake area. Increased efficiency--including the stretch-out of the production season from the present 120-150 days to about 200 days by 1985--should be expected. It is unlikely, however, that total output will grow faster than population.

The projection of output for potato processors, then, is based on more efficient utilization of capacity rather than aggressive expansion. Embodying the efficiency increment in a stretch-out of the processing campaign from an average of 135 days to 200 days each year, it is assumed that a similar rate of output expansion--equal to 1.4 percent per year, less than forecast national population growth--is maintained through the succeeding quarter century.

Processing of dairy products, like the dairy farming upon which it is built, has expanded vigorously in the Central Snake region, and should continue to rise, based on the trend toward greater per-capita consumption of dairy products. Table 23, which contrasts population growth and marketing of whole milk and cream, indicates the relative growth of dairying in Idaho.

TABLE 23
MARKETING TRENDS FOR WHOLE MILK AND CREAM COMPARED TO POPULATION TRENDS, 1949-1959

Area	1959 as a percent of 1949	
	Population	Pounds of milk sold
United States	118	141
Pacific Coast States	140	139
Mountain States	135	166
Idaho	113	176

With consumption of milk products rising nationally at a rate about twice that of population, it becomes clear that the needs of the fast-growing Pacific Coast states, particularly California, are creating expanding markets for Idaho dairy farmers. With something over half of Idaho's dairy products produced in the Central Snake Basin--and the portion is rising--the area should be a principal beneficiary of the trend.

Output targets are based on three considerations:

(1) Growth of national population,

(2) Growth of per-capita consumption, about .5 percent per year,

(3) Growth due to the locational advantages resulting from availability of suitable agricultural land and propinquity to areas of rapid population growth; this amounted to about 2.5 percent per year during the last decade. It is unlikely to be so high in the future, since transfer of farmland otherwise employed would occur if shortage pushed dairy prices up appreciably. Arbitrarily, this factor is assumed to even out at a .5 percent rate during the course of the study period.

Other processed agricultural products should display significant growth. The Central Snake Basin's ability to provide a variety of raw materials should interact with the trend to greater processing of foods to create a sustained growth of output of fruits, vegetables, and prepared foods. Without examining trends for specific products, it is assumed that output of miscellaneous food products will grow at the rate of population, with an added annual increment of .5 percent--

that being the approximate difference between the Nation's rate of population growth and of expansion of the index of food-processing output for the twentieth century, and for the recent period, 1947-1958. a/

Output projections are summarized in Table 24. Sugar output is based on 1959 production, meat production on an estimate of slaughter capacity, potato production is an estimate based on plant capacity and total southern Idaho-eastern Oregon production. Other processing is presented in the form of an index number.

TABLE 24
OUTPUT PROJECTIONS, PROCESSED FOODS, 1960-2010

Product	1960	1985	2010
Sugar (capacity, tons/day)	9,100	17,700	34,000
Meats (cattle slaughter, head/day)	600	1,500	4,000
Potatoes (capacity, tons/day)	2,800	4,000	5,700
Dairy Products (production index)	100	200	400
All Other (production index)	100	180	330

The level of employment to be derived from the expansion of food processing involves the problem of productivity. During the 1950-1960 decade, output per man hour in a cross section of food-processing activities rose at an annual rate of about 2.8 percent--with the gains distributed among segments of the industry with astonishing consistency. Continued growth of employment productivity on this order could result in attainment of 1985 and 2010 production projections with no increase in the labor force.

a/ Trends and Patterns in U.S. Food Consumption (Agriculture Handbook No. 214), U.S. Department of Agriculture; June 1961.

Such an eventuality seems unlikely, however. Shorter average working hours would seem an early result of continued productivity gains, if past history may serve as a guide; and maintenance of so marked a rate of improvement also seems a doubtful matter. The U. S. Department of Labor has projected that increased employment in all manufacturing will occur at a 1.3 percent annual rate between 1960 and 1975 to meet the Nation's need for goods. Because productivity gains in food processing were equal to those of all manufacturing in the last decade, it would appear reasonable to assume a similar correspondence in the future; and since it has been assumed that the Central Snake Basin's output of processed foods will serve a growing portion of the total national demand, a rate of gain somewhat in excess of the rate for all manufacturing would seem plausible. Employment in food processing, then, is projected, for design purposes, to rise at a rate equal to the national rate of population growth, with productivity gains supplying the incremental product to meet demands arising from larger per-capita consumption. This assumption places employment among food processors at about 8.5 thousand in 1985.

C. Forest Products

The output of forest products of the Central Snake Basin may be anticipated to expand. Although the declining trend of per-capita use of lumber continues, other wood-based products--notably paper and plywood--continue to display vigorous demand patterns that contribute to the need to utilize more intensively the inelastic supply of forests.

It may be assumed with relative assurance that development of the Central Snake Basin's timber supplies will become increasingly intensive. Coastal forest areas are, for the most part, being exploited at, or above, sustained yield levels. And though the total supply of western softwood timber should be greater in 1985 than it was in 1960, due to the assertion of the more rapid growth of young, second-growth tree stands, continued population growth should result in expansion of demand that requires broadening use of the southern Idaho-eastern Oregon forest resource.

Indeed, a case may be made for more rapid demand growth than in the past. Given stability in slowly declining use of lumber, the rising demand for other wood-based products would result in rapid growth. Per-capita use of wood in the U. S. has been almost stable for two decades--something over 55 cubic feet in 1940, about 66 cubic feet in 1950 (at the height of the post-war building boom), and 59 cubic feet in 1960. But the overall dimensions of use conceal some radical shifts in the form of consumption. Less lumber is used in construction, but more plywood is employed; use of wooden boxes and barrels has declined, while use of paper cartons has skyrocketed. Table 25 presents, in the form of an index, use of raw wood in various forms at five-year intervals over the last two decades.

TABLE 25 [a]

INDEX OF WOOD USE IN MANUFACTURING, 1940-1960 (1940=100)
DOMESTIC PRODUCTION PLUS NET IMPORTS

Year	Total	Sawlogs	Veneer Logs	Pulpwood	Other [b]
1940	100	100	100	100	100
1945	99	93	104	126	88
1950	134	132	154	176	80
1955	143	129	276	216	72
1960	144	122	358	232	70

[a] Source: Statistical Abstract of the U. S.

[b] Excludes fuelwood.

Reduced to average annual growth rates, the index numbers indicate that the use of wood in various forms is rising at a rate outpacing population growth. Between 1940 and 1960:

Population grew at a 1.55 per cent average rate;

Cut and imports of wood for all purposes grew at a 1.8 percent average rate;

Cut and imports of veneer logs grew at a 5.3 percent average rate;

Cut and imports of pulp logs grew at a 4.3 percent average rate;

Cut and imports of sawlogs grew at a 0.8 percent average rate.

The results have been a persistent rise in the price of stumpage, increased imports of wood and wood products (from 5.4 percent of the 7.4 billion cubic feet used in 1940 to 12.4 percent of the 10.6 billion cubic feet of 1960), fuller utilization of the tree, greater attention to rationalized forestry practices, use of trees of lower quality--and growing use

of what were, in 1940, secondary forest tracts, notably in the southeastern states, but including the Central Snake Basin. If the present trends in timber harvest and wood products manufacturing are assumed to maintain their force, a projection outlining the course of the industry's development may be outlined.

(1) The annual cut will increase at a rate somewhat over that of population growth until the sustained yield level is reached. If it is assumed that cut will continue to increase at a rate about a third faster than population, and that this rate will apply in the study area, the optimum cut of 520 million board feet would be achieved before 1985 (using the 275 million board feet of 1956 as a base, and applying a 2.5 percent rate.)

(2) Utilization will be more intense--and more varied. A growing portion of waste wood will be chipped and used in production of pulp and board. Attaining this end will require more heavily capitalized mills, with larger productive capacity to justify added processing costs. Plywood production, too, should increase materially--the rising cost of the raw material makes it almost mandatory to make the highest grade of product to which each tree is suited. Such results may be achieved in two ways: development of forest products complexes with lumber, plywood, millwork, and chipping under one roof; alternatively, development of log grading and warehousing by wholesalers, who may sell logs to users seeking the grades and sizes suitable to their own operations.

Production of hardboard, pressboard, or similar products seems likely. The area develops enough chippable residues to supply several such plants; utilization of these compositions is rising, and is

consistent with the tendency to use wood more intensively. Capital requirements for establishing production are relatively modest. The Baker, Oregon, area seems a likely site for such a plant. Other possible locations exist along the Boise, Payette, and Weiser Rivers.

(3) Production of wood pulp or paper in the area does not seem probable.[1/] The average size of the economic pulp mill today seems to begin at 400 tons per day capacity, with most mills installed along the Pacific slopes rapidly expanding toward a capacity of 700 tons per day or more. A mill of 700 tons capacity chews up some 435,000 cords of wood--some 55 million cubic feet--a year. The sustained yield cut of the area has been estimated at about 90 million cubic feet, and the principal forest products firm of the area presently uses a substantial portion of the area's chippable residues at an established plant outside the basin. With a large part of potential pulpwood production already tied up, and less than twice the total wood supply needed to support a substantial pulp mill, it would seem unlikely that one would be established in the area. Too, the risk of locating a mill in an area without the resources to support expansion has been enhanced by the extended reach of established mills for a wood supply. Chips are now shipped from Emmett to Wallula, more than 200 miles; from Boise to Lewiston, over 250 miles; as well as to the Middle West.[2/] With established plants already reaching into the basin for pulpwood,

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1/ This judgment conflicts with that of an earlier report upon the Payette River Basin, which took into consideration only the level of raw material availability and not the existence of already established utilization practices. It also disagrees with a forecast prepared for the Bonneville Power Administration by the Intermountain Forest and Range Experiment Station of the USDA, which predicts construction of a 300-ton-per-day mill in southern Idaho between 1972 and 1980.

2/ One northwestern Washington pulp mill reaches into northern Montana for pulpwood--has even installed special wood-handling equipment to use it.

on the face of things, it is unlikely that there are reasonable places for a potential Central Snake mill to go for its needs.

(4) Employment will rise with production. This has not been the case nationally during the last decade, as declining use of lumber and rising labor productivity--particularly in sawmills, where the demise of the small mill and increasing inputs of capital in the forms of materials-handling machinery and energy have lowered manpower needs. It does, however, seem a likely course of events in the Central Snake area for a number of reasons.

(a) In contrast to other timber-producing areas, the lumber resource is under-exploited, and an increase in the level of production will be required simply to bring logging to the sustained yield level.

(b) Southern Idaho forest production has evolved slowly, with much of its development occurring over the last decade. Relatively efficient, it does not have the potential manpower savings that are available to areas with a longer history of extensive forestry.

(c) Increasing difficulty in harvesting timber will be encountered as the less favorable stands are logged, with a consequent addition to labor requirements.

(d) A constantly increasing utilization and up-grading of wood by related manufacturing industries may be anticipated as the area comes to occupy a larger segment of the total forest products output. U. S. Forest Service Bulletin PNW-3, Toward Complete Use of Eastern Oregon's Forest Resources[1/] contains some rough guides to the employment potential involved in imposing additional manufacturing on wood,

1/ Pacific Northwest Forest and Range Experiment Station, U. S. Dept. of Agriculture, May 1963.

with the employment gain running from about two and a half times when logging advances to sawmilling to almost six times when the log is used to manufacture pulp, plywood, or hardboard.

The dimensions of the gain to be anticipated in employment is suggested by the U. S. Forest Service which has produced a projection for all of southern Idaho that assumes sustained yield production by 1980, and an 80 percent gain in employment. If this projection is adjusted to eliminate 500 workers forecast to be employed in a pulp mill, a rate of employment increase similar to that projected for the dimensions of the total cut, about 2.5 percent per year, is obtained. The projection, then, strikes a balance between increased cut, increased productivity (also about 2.5 percent per year, based on the recent past), and increased intensity of utilization, by tacitly assuming that they are approximately equal in effect, with productivity cancelling out either increased cut or additional utilization. This seems a legitimate assumption, and the projection, adopted for this report, designs employment of 3,500 in forest products industries by 1985.

D. Miscellaneous Manufacturing and Construction

Miscellaneous manufacturing--i.e., all manufacturing other than food processing and production of lumber and other forest products--has, in the Central Snake Basin in recent years, grown at a rate in excess of other significant sources of employment opportunities. Growth, however, has been closely related to that of primary industries, agriculture, food processing, lumbering. In effect, growth of output and activity in primary industries has created markets for the products of related industries. To the extent that growth of the primary industries has resulted in increased employment and population, broader markets for other products, consumers' goods for the most part, have also been created.

Viewed in this light, development of miscellaneous manufacturing is a function of growth in primary industries, which create a market atmosphere conducive to entrepeneurship. A projection of employment may then be made in terms of the dimensions of employment in primary industries.

(There are, of course, serious disadvantages to such a projection. While the hazy assumption is made that, for the most part, production will involve products to be utilized by consumers and by primary industries, it is entirely possible that wholly unrelated types of products will appear. This is, in the terms of this study, immaterial--except in the case of the industry which requires unusual water supplies or produces large amounts, or serious concentrations, of waterborne wastes. Unfortunately, there is no means of predicting the appearance of such an industry. Forecasting techniques have not reached a level which entitles the projection to pose as prophecy.)

Since the level of employment in miscellaneous manufacturing is to be viewed in the light of that of the primary industries, no examination of relative growth rates of the varied industries has been attempted. For the purpose of creating a design economy for 1985, it is assumed that the experience of the quarter century 1960-1985 will approximate that of the last decade, with one job created in all other types of manufacturing for each two additional sources of employment in food processing and lumbering. This would result in a work force of about 6.5 thousand in 1985.

Construction, too, must be viewed as an element of continuing vigor in the regional economy. Most projections of national economic activity agree in forecasting rising levels of construction, based on a growing population's needs for housing, the broader production base required by an expanding economy, and an existing gap between social welfare demands and institutional capabilities. a/ The Central Snake Basin would seem to be an area capable of supporting a particularly high level of construction employment. It

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a/ One might suggest, too, that forecasters who face the conflicting circumstances of rapidly rising labor productivity and the postulates of the Employment Opportunity Act of 1946 are tempted to clutch at increased construction employment as a way out of the impasse posed by rising population. Development of improved materials and techniques over the course of the last ten years has, however, caused a rise in productivity of construction labor equivalent to that of manufacturing. Since the industry had previously been notoriously retrograde, there is wide latitude for improvement. It is not improbable that the improvement of labor productivity in construction over the next ten years will rival that of agriculture during the last decade. Thus the industry seems a tenuous sort of refuge for the beset forecaster.

is relatively undeveloped. Belated industrialization and opportunities for development of a number of natural resource projects suggest levels of construction somewhat higher than those of industrially matured areas.

It should be noted, too, that the staff and depot functions of the Morrison-Knudson Company give the community of Boise an opportunity to share in the overall development of construction, in a manner analogous to that in which the economic fortunes of a city which is the site of a major manufacturing plant reflect the experiences of the particular manufacturing industry.

In view of these factors, it does not seem unreasonable to forecast maintenance of the relative weight of construction employment over the period 1960-1985 at the same, rather high, 8 percent of the labor force it has occupied for several decades. Adherence to this pattern would result in the employment of some 11 thousand at construction in 1985.

E. Trade and Services

Although service employment in the Central Snake Basin rose comparatively less rapidly than in the Nation as a whole during the last decade (cf Table 6), there is little reason to anticipate that a lag of this sort will be permanent. The combination of rural social patterns, sub-average personal income, and low population density that inhibited the development of service industries may be expected to loosen under the pressures of industrialization and urbanization--forces evident in the region at this time.

While the growth of trade and service employment may be anticipated to be most marked in the City of Boise, and in the Nampa-Caldwell, Payette-Ontario industrial centers, these areas may be expected to contain an increasing proportion of the total population of the study area--with the result that occupation and income patterns should, in the future, tend to bear a more faithful correspondence to national configurations.

Because the employment-generating effects of trade and service industries tend to be minor, no effort is made to examine growth trends of specific types of services.[a/] Instead, the projection of service employment is presented in terms of the long-term experience of this segment of the economy. For the Nation as a whole, the portion of the labor force engaged at service occupations has increased by an increment of about 0.3 percent per year in this century--though this rate was exceeded considerably in the course of the last decade. Roughly the same proportion of increase in service occupations occurred in the Central Snake Basin over the last two decades. Again, the increase was more rapid in the nineteen-fifties than in the 'forties.

For the purpose of drawing an economic design of the area for the period 1960-1985, it is assumed that the portion of the labor force engaged in trade and services will continue to increase at an incremental 0.3 percent per year. Maintenance of this level of increase would result in employment of roughly 64 percent of the total labor force--about 87 thousand persons--in trade and service occupations in 1985.

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a/ Manpower Report of the President (March 1963), previously alluded to, presents such an analysis for the Nation as a whole for the period 1960-1975.

F. Mining-Forestry-Unemployment

The level of employment in mining is based on an imponderable, the presence or absence of utilizable mineral deposits. Half a century ago, a major portion of the area's population was supported, directly or indirectly, by mining. By 1960, only one-tenth of one percent of the total labor force was engaged in mineral extraction. In order to create an economic design, it is assumed--entirely arbitrarily--that the same number of persons, about 200, will be engaged in mining in 1985 as were in 1960.

Forestry should continue to display vigorous growth. During the nineteen-fifties the number employed in forestry almost doubled--an annual growth rate of nearly 7 percent. The needs of conservation, outdoor recreation, higher output of forest products, all indicate continually expanding requirements for foresters. While a 7 percent annual growth rate would seem excessive, the obvious need for, and trend toward, scientific forest management suggests growth of employment opportunities at a rate well above the rate of growth of population. For design purposes, it is assumed that a rate of growth double that of national population growth will apply over the period, or about 3.8 percent, and that some 1.2 thousand will be employed at forestry by 1985.

Full employment, required under the 1946 law, has generally been interpreted to mean maintaining a rate of unemployment not exceeding 4 percent of the labor force. Accordingly, 4 percent of the labor force, 5.5 thousand, are assumed to be unemployed in 1985.

IV. FUTURE LABOR FORCE AND POPULATION

A. 1960-1985

The design pattern of the 1985 economy drawn in the preceding sections, and summarized in terms of the labor force in contrast with 1960, in Table 26 permits a calculation of 1985 population dimensions. If it is assumed that the labor force/population ratio continues to stand at about 38 percent, then a civilian population of some 360,000 is indicated, to which is added a military-derived population of roughly 10,000 in the Mountain Home area. An annual growth rate of 1.6 percent per year, approximately that of the last decade, but somewhat under that forecast for the United States as a whole, is indicated.

TABLE 26

SUMMARY OF 1960 AND ILLUSTRATIVE 1985 LABOR FORCE AND POPULATION

	1960		1985	
Agriculture		17.5		12.0
Forestry, fisheries, mining		.7		1.5
Construction		7.4		11.0
Manufacturing		11.3		19.0
Forest Products	2.5		3.5	
Food Processing	5.2		9.0	
All other	3.6		6.5	
Trades and Services		53.6		87.0
Unemployed		5.1		5.5
TOTAL LABOR FORCE		95.8		136.0
POPULATION		252.0		370.0

B. 1985-2010

Although an attempt to project population through 2010 by the same means--production, employment, labor-force/population ratio--employed to create the population design for 1985 is entirely feasible, the effort seems more than a little specious. The changes in productivity that are possible in half a century, under conditions of expanding technological competence and intensive research efforts, make any attempt to approximate the details of conditions in 2010 seem potentially fruitless. (Consider, for example, the task of a forecaster of 1910 essaying a similar projection of 1960--without any conception of even the techniques of mass production and consumer financing, much less the sheer mass of products that changed the conditions of life in the next five decades.)

A more general approach will be employed. The U. S. Census Bureau has projected national population to 2010. It would seem more fruitful to apportion a part of the forecast population increase to the study area than to attempt a more elaborate rationale, since planning based on such long-term considerations must, of necessity, be broad rather than detailed.

Accordingly, the population projection submitted for 2010 is based on the following assumptions:

(1) National population will grow at a rate of roughly two percent per year from 1985 through 2010 (U. S. Department of Commerce, Bureau of the Census, P-25, Series II.)

(2) Population growth in the Central Snake Basin will continue to grow at a rate somewhat under that predicted for the Nation as a whole, for several reasons:

(a) The principal industries of the area, agriculture and lumbering, indicate a lesser ability to support increased direct and indirect employment than do production industries as a whole.

(b) There is a demonstrated national tendency for population growth to be concentrated in metropolitan centers.

(c) Most parts of the study area have established a pattern of out-migration, in keeping with their basically rural nature.

(d) As the force of rural social patterns is loosened by the progress of urbanization, the birth rate--consistently one of the Nation's highest--should demonstrate a tendency to align more closely with national trends.

(e) With population expansion, the ability of development programs to foster growth of the area (e.g., reclamation programs, establishment of military bases) will grow proportionately less effective.

Accordingly, population growth is projected for design purposes to occur at 90 percent of the national rate--the relationship established by the 1960-1985 forecast--or at an average annual rate of 1.8 percent. Growth occurring at such a rate would indicate a population on the order of 585,000 persons in 2010.

C. Population Distribution

An hypothetical distribution of population among subareas--municipalities, counties, river basins--projected to 1985 and 2010 is presented in Table 27. Assignment of population to specific areas is largely mathematical, though existence of unusual expansion prospects has been recognized in projecting population to 1985. It should be emphasized once more that these projections represent mathematical conventions based on a Census Bureau forecast of national population.[1/]

1/ See appendix for method applied in distributing population among subareas.

TABLE 27
POPULATION DESIGN: 1960, 1985, 2010

Area	Population 1960 b/	1985 b/	2010 b/
Boise Urbanized Area	74.0	144.0	280.0
Meridian	2.1	3.6	5.4
Kuna	.5	.6	.8
Ada County Rural	16.9	16.9	16.9
Nampa-Caldwell	30.2	50.8	85.4
Parma	1.3	1.8	2.7
Wilder	.6	.7	.8
Middleton	.5	.8	1.3
Notus	.3	.4	.5
Canyon County Rural	24.7	24.7	24.7
Mt. Home Urbanized Area	12.0 a/	17.0	26.5
Glens Ferry	1.4	1.9	2.8
Elmore County Rural	3.3	4.0	4.0
TOTAL: Boise River B.	167.8	267.2	451.8
Payette	4.5	8.6	13.0
Emmett	3.8	7.2	10.9
McCall	1.4	2.0	3.0
New Plymouth	.9	1.3	1.6
Cascade	.9	1.3	1.6
Fruitland	.8	1.2	1.5
Horseshoe Bend	.5	.7	.8
Rural	14.0	14.7	14.7
TOTAL: Payette River B.	26.8	37.0	47.1
Homedale	1.4	3.0	4.5
Marsing	.6	1.0	1.3
Owyhee County Rural	4.4	4.4	4.4
TOTAL: Owyhee County	6.4	8.4	10.2
Nyssa	2.6	3.5	5.3
Ontario	5.1	7.3	11.4
Vale	1.5	2.0	3.0
Malheur County Rural	13.6	10.6	10.6
TOTAL: Malheur County	22.8	23.4	30.3

a/ Rural population growth for the period 1950-1960 assumed to have occurred entirely in the Mountain Home area.

b/ Columns may not add, due to rounding.

TABLE 27 (continued)

Area	Population		
	1960	1985	2010
Baker	10.0	14.6	22.8
Halfway	.5	.6	.8
Huntington	.7	.8	1.0
Baker County Rural	6.1	6.6	6.6
TOTAL: Baker County	17.3	22.6	31.2
Weiser	4.2	6.1	9.5
Council	.8	1.0	1.3
New Meadows	.6	.7	.9
Cambridge	.5	.6	.8
Rural	5.2	4.2	4.2
TOTAL: Weiser River B.	11.4	12.6	16.7
TOTAL: CENTRAL SNAKE B.	252.4	370.	585.0

APPENDIX

Projection of population among subareas rests on twin assumptions--that employment and urbanization trends in existence during the last two census periods will persist, and that the labor force to population ratio will stand at a uniform .38 in subareas. Principal elements of the computations are presented in Table A.

I. The basic element in preparing these projections was the allocation of 'goods industries' employment. With some modifications, it was assumed that that the distribution of employment in 1985 would be similar to that of 1960. This seemed likely in view of the fact that the production and distribution factors determining employment must--unless some entirely new source of basic materials is discovered--depend on development of existing circumstances. Modifications were these:

(a) Agriculture: to give force to the substantial irrigation opportunities present and to the critical importance of agriculture in those counties, agricultural employment was allotted in Elmore, Malheur, and Owyhee counties on the basis of one man per 700 arable acres: that being an extension of the trend observable in similar mixed farming areas of the Pacific Northwest east of the Cascade Range. (cf.: Economic Base Study & Forecast, Umatilla River Basin.) Remaining agricultural employment was allotted to other areas on the basis of the 1960 distribution.

(b) Food Processing: Ten percent of the total increase projected for food processing employment was arbitrarily assigned to Elmore and Owyhee Counties to reflect materially increased agricultural outputs anticipated from extension of irrigation.

Exceptions to this pattern were restricted to the period 1960-1985, and are based on unusual circumstances suggested by the development pattern forecast for goods industries employment. They include:

(1) Rural populations of Malheur, Elmore, and Owyhee counties were allotted on the basis of agricultural employment. In the case of Owyhee County, this resulted in a substantial incremental population, which was assigned to Homedale, the principal settled place.

(2) Because of the higher average rate of growth in goods industries employment forecast in the Payette River Basin, the higher growth rates appropriate for communities of a larger size were used to allot 1985 populations. Thus Payette and Emmett were assumed to grow at the same rate as Nampa-Caldwell; McCall was assumed to grow at the rate of cities of 2,500 to 10,000; smaller settled places were assigned the same growth rates as towns of 1,000 - 2,499.

(3) In the cases of the Payette River Basin and Baker County, where lumbering is largely concentrated, a residual population increment found to exist after application of appropriate 1960 - 1985 growth rates to communities was assigned to rural residents. This does not seem unreasonable, in view of the nature of residence of persons working at logging or in sawmills.

(4) In the case of the Weiser River Basin, application of the chosen growth rates to communities resulted in a loss in rural population. Since a decline of about .5 thousand in agricultural employment was projected for the area, the decline in rural population seems reasonable.

TABLE A

DISTRIBUTION OF EMPLOYMENT AMONG SUBAREAS, 1985

Sub-Area	Goods Industries: Employment in Thousands							Service Industries: Employ. in 1,000's					
	Agri-culture	Lumber-ing	Food Process-ing	Other Mfg.	Con-struc-tion	Forestry and Mining	TOTAL	Approx. 1960 Svce Ratio	"Goods-Derived"	"Growth-Derived"	Total Svces	Total Employment	Labor Force	Population
1. Ada County	1.5	.6	1.5	3.6	5.5	.4	13.1	70%	35.2	10.8	46.0	59.1	61.6	165.0
2. Canyon County	3.6	.2	3.6	1.6	1.7	.1	10.8	55	14.6	3.2	17.8	28.6	29.8	79.2
3. Elmore County	.7	.1	.2	.1	.3	.1	1.5	35	2.8	.9	3.7	5.2	8.7 a/	22.9
4. Owyhee County	1.2	-	.3	.1	.2	-	1.8	35	1.0	.3	1.3	3.1	3.2	8.4
5. Payette R. Basin	1.5	1.6	1.4	.2	1.1	.4	6.2	45	5.4	1.8	7.2	13.4	14.1	37.0
6. Weiser R. Basin	.8	.4	.5	.2	.3	.1	2.3	45	2.1	.2	2.3	4.6	4.8	12.6
7. Malheur County	2.2	-	1.3	.2	.7	.1	4.5	45	4.0	-	4.0	8.5	8.9	23.4
8. Baker County	.8	.6	.2	.5	1.2	.3	3.6	50	3.9	.8	4.7	8.3	8.6	22.6
TOTAL b/	12.0	3.5	9.0	6.5	11.0	1.5	43.8		69.0	18.0	87.0	130.5	136.0	370.0

a/ Includes 3.3 in armed forces.

b/ Columns may not add due to rounding.

II. Service industry employment was derived--in two steps--from employment in goods industries:

(a) A basic labor force was computed by assuming for each subarea a service ratio similar to that of 1960 (i.e., same, to the nearest 5 percent). In this fashion, some 69 thousand service positions were allotted, 18 thousand less than the projection for the entire region.

(b) On the assumption that growth of service industries would be most pronounced in areas of more rapid population growth, remaining service employment was distributed according to the percentage of the total increase in goods industries and allotted service industries employment occurring in each area.

III. Total employment for each subarea was assumed to include 96 percent of its labor force, and the labor force was assumed to include 38 percent of population, permitting a calculation of total population for eight major subareas.

IV. Further distribution of population rests on the assumption that growth would continue to occur at established rates. This procedure resulted in close correlation between the combined populations of subareas and the projected population totals for 1985 and 2010.1/ With several exceptions, the allotment of population followed this pattern:

1/ In the case of 2010 population projections, the combination of subarea population forecasts was less than 1.3 percent apart from the total population forecast obtained by applying a total area growth rate derived from the Census Bureau's national growth rate forecast.

(a) Rural populations were considered to be constant.

(b) The Boise urbanized area, Nampa-Caldwell, cities of 2,500 to 10,000, and cities of 1,000 to 2,499 were assumed to grow at the same rates as each size category did during the period 1940-1960.

(c) Cities of less than 1,000 were assumed to grow at the lower rate established in the period 1950-1960.